

## **Supplementary materials**

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**Supplementary Table 1.** Severe Covid-19 outcomes by variant and time period.

	N <sup>a</sup>	Admission <sup>b</sup>	Oxygen <sup>c</sup>	Ventilation <sup>c</sup>	Death <sup>c</sup>
<u>Variant</u>					
Delta	16	5 (31)	3 (19)	2 (13)	2 (13)
Omicron	198	41 (21)	21 (11)	8 (4)	6 (3)
Unknown	912	114 (13)	59 (6)	27 (3)	20 (2)
<u>Time period</u>					
Weeks 1-2	151	23 (15)	13 (9)	4 (3)	3 (2)
Weeks 3-4	644	98 (15)	52 (8)	23 (4)	17 (3)
Weeks 5-6	331	39 (12)	18 (5)	10 (3)	8 (2)

Data are number (%) within subgroup specified

Clinical outcomes are 'all cause', not specifically due to Covid-19

<sup>a</sup>Number within subgroup

<sup>b</sup>Within 14 days of positive PCR

<sup>c</sup>Within 28 days of positive PCR

**Supplementary Table 2.** Association of vaccination with severe Covid-19 outcomes in subgroups with SARS-CoV-2 infection.

Subgroup	Vaccinations <sup>a</sup>	Odds ratio (95%CI) for severe Covid-19 outcomes							
		Admission <sup>b</sup>		Oxygen <sup>c</sup>		Ventilation <sup>c</sup>		Death <sup>c</sup>	
65-94 years	Two	0.66	(0.29-1.52)	0.80	(0.28-2.26)	1.42	(0.29-7.06)	1.19	(0.29-4.85)
	Three	<b>0.35</b>	<b>(0.15-0.85)</b>	0.33	(0.11-1.02)	0.57	(0.10-3.13)	0.76	(0.18-3.25)
	Three (ref Two)	<b>0.54</b>	<b>(0.29-0.98)</b>	<b>0.42</b>	<b>(0.20-0.89)</b>	0.40	(0.14-1.11)	0.64	(0.26-1.56)
19-64 years	Two	<b>0.52</b>	<b>(0.29-0.94)</b>	0.57	(0.26-1.23)	0.83	(0.31-2.19)	0.90	(0.31-2.58)
	Three	<b>0.22</b>	<b>(0.11-0.47)</b>	0.53	(0.23-1.23)	0.66	(0.23-1.92)	0.75	(0.24-2.35)
	Three (ref Two)	<b>0.42</b>	<b>(0.21-0.84)</b>	0.94	(0.43-2.05)	0.79	(0.31-2.04)	0.83	(0.31-2.24)
Immune suppression <sup>d</sup>	Two	0.44	(0.14-1.35)	0.28	(0.05-1.46)	0.52	(0.09-2.83)	0.67	(0.09-4.80)
	Three	<b>0.23</b>	<b>(0.07-0.79)</b>	0.42	(0.09-2.04)	0.48	(0.08-2.85)	0.62	(0.08-4.72)
	Three (ref Two)	0.53	(0.20-1.38)	1.50	(0.42-5.37)	0.93	(0.22-3.93)	0.92	(0.19-4.46)
Two vaccines <sup>e</sup>	Months since	<b>1.30</b>	<b>(1.17-1.44)</b>	<b>1.45</b>	<b>(1.22-1.73)</b>	1.09	(0.98-1.22)	1.09	(0.97-1.23)
Three vaccines <sup>f</sup>	Months since	0.87	(0.60-1.26)	1.05	(0.73-1.49)	0.99	(0.62-1.59)	0.99	(0.61-1.61)

Odds ratio (95% CI), including variables in Table 2, within subgroup comparing vaccination by group or time since last dose

Clinical outcomes are 'all cause', not specifically due to Covid-19

Vaccination status considered to change after the 7<sup>th</sup> post dose day

<sup>a</sup>Reference none (unvaccinated) except where stated

<sup>b</sup>Within 14 days of positive PCR

<sup>c</sup>Within 28 days of positive PCR

<sup>d</sup>Any immune suppression treatment including steroids, tacrolimus, mycophenolate, azathioprine, cytotoxic and biologic agents

<sup>e</sup>Time since last vaccine dose, in two-dose subgroup only

<sup>f</sup>Time since last vaccine dose, in three-dose subgroup only

**Supplementary Table 3.** Association of vaccination with severe Covid-19 outcomes in sensitivity analyses.

Condition	Vaccinations <sup>a</sup>	Odds ratio (95%CI) for severe Covid-19 outcomes							
		Admission <sup>b</sup>		Oxygen <sup>c</sup>		Ventilation <sup>c</sup>		Death <sup>c</sup>	
Prior SARS-CoV-2 excluded	Two	<b>0.53</b>	<b>(0.32-0.88)</b>	0.53	(0.27-1.06)	1.04	(0.43-2.54)	1.06	(0.41-2.71)
	Three	<b>0.25</b>	<b>(0.14-0.44)</b>	<b>0.30</b>	<b>(0.14-0.65)</b>	0.68	(0.26-1.76)	0.75	(0.28-2.04)
Weeks 1-2 only	Two	0.63	(0.18-2.24)	0.69	(0.17-2.73)	1.03	(0.14-7.31)	0.77	(0.10-6.10)
	Three	<b>0.19</b>	<b>(0.04-0.95)</b>	0.36	(0.07-1.89)	0.78	(0.08-7.42)	0.71	(0.07-7.04)
Weeks 3-4 only	Two	0.80	(0.44-1.46)	0.91	(0.42-1.95)	1.26	(0.45-3.57)	1.29	(0.43-3.89)
	Three	<b>0.34</b>	<b>(0.17-0.67)</b>	0.56	(0.24-1.27)	0.92	(0.31-2.75)	0.94	(0.29-3.01)
Weeks 4-6 only	Two	<b>0.27</b>	<b>(0.10-0.74)</b>	0.18	(0.03-1.06)	0.53	(0.13-2.13)	0.21	(0.02-2.25)
	Three	<b>0.25</b>	<b>(0.09-0.70)</b>	0.16	(0.03-1.07)	0.31	(0.07-1.41)	0.08	(0.01-1.55)

Odds ratio (95% CI), including variables in Table 2, comparing vaccination groups, under condition specified

Clinical outcomes are 'all cause', not specifically due to Covid-19

Vaccination status considered to change after the 7<sup>th</sup> post dose day

<sup>a</sup>Reference none (unvaccinated)

<sup>b</sup>Within 14 days of positive PCR

<sup>c</sup>Within 28 days of positive PCR